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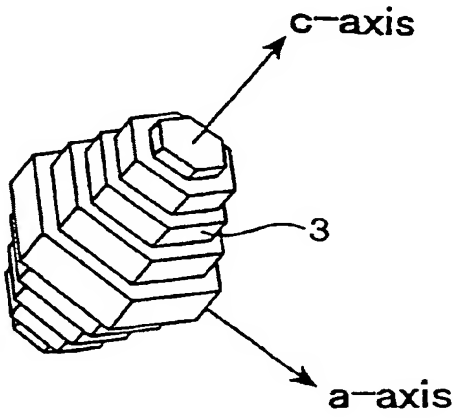
(54) Title: CONTROL OF ICE-CRYSTAL GROWTH BY NON-PROTEINACEOUS SUBSTANCE



(57) Abstract: The present invention makes it possible to attain various applications using antifreeze activity without an antifreeze protein. The agent for the inhibition of ice-crystal growth includes a non-proteinaceous substance, wherein an aqueous solution of the non-proteinaceous substance in a concentration of 10 mg/ml causes the deposition of non-flat disk-shaped ice crystals. The agent for the lowering of an ice-crystal growth initiation temperature includes a non-proteinaceous substance, wherein an aqueous solution of the non-proteinaceous substance in a concentration of 10 mg/ml shows thermal hysteresis by a temperature of 0.020 C or higher. The agent for the control of water freezing includes a non-proteinaceous substance, wherein an aqueous solution of the non-proteinaceous substance in a concentration of 10 mg/ml shows thermal hysteresis by a temperature of 0.020 C or higher and causes the deposition of non-flat disk-shaped ice crystals. The above non-proteinaceous substances are usually polymers each having a carbon chain as the main chain.

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